Economic Brief

APRIL 2010, EB10-04

Comparing Labor Markets across Recessions: A Focus on the Age Composition of the Population

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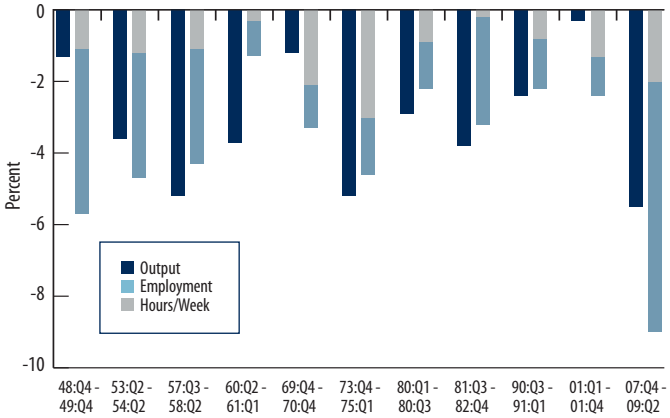
Simply looking at unadjusted versions of traditional statistics may not be the best way to compare the state of the current economy to previous periods. When comparing recessions, it is important to account for demographic changes.

There has been substantial debate about how to most fruitfully compare the recent recession to those of the past. This *Economic Brief* seeks to shed some light on this important issue by taking a look at a few conventional measures of employment and output declines during recessions dating back to 1948. Yet it diverges from the conventional treatment of these statistics by acknowledging that the workforce today looks different than it did in the past. One important feature of the current economy is that the population is older today. Thus, simply looking at unadjusted versions of traditional statistics may not be the best way to compare the state of the current economy to previous periods.

HOW BAD WAS THE RECENT RECESSION?

To put the discussion about the recent recession in perspective, it is important to compare it with previous episodes. Figure 1 shows the cumulative growth rates of output and some of its components during contractions of each postwar recession – the growth of employment and weekly hours per employee in the nonfarm business sector (NBS).[1] (Productivity growth, also a component of output, is a residual that is not pictured here.) For our purposes, the beginning of a contraction is defined as the first quarter in which the output growth turned negative. As you can see, the drop in output during the 2008 contraction – which started in the first quarter of the 2008 – was comparable to the declines in the 1957 and 1973 contractions. However, the decline in employment (7 percent) was much larger. In fact, it's larger than any of the recessionary periods since World War II.

FIGURE 1: GROWTH OF OUTPUT AND EMPLOYMENT DURING POSTWAR RECESSIONS (NONFARM BUSINESS SECTOR)



SOURCE: Bureau of Labor Statistics

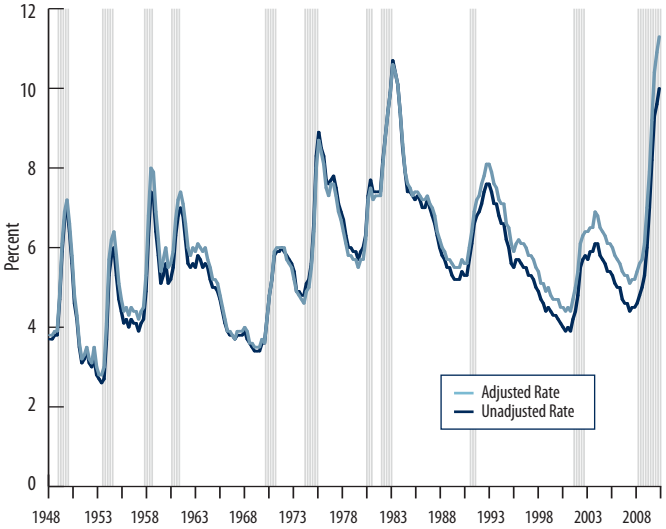
The decline in weekly hours worked per employee in the 2008 recession (-2.0 percent) ranks third behind the downturns of 1969 (-3.0 percent) and 1973 (-2.1 percent). Adding the decline in weekly hours worked to the decline in employment puts the aggregate figure for the decline in this component of output during the 2008 recession at almost 9 percent. Thus, the recent contraction was indeed the most severe of all postwar contractions by this measure. The second largest decline of this sort in the postwar period took place in the 1948 contraction when the aggregate figure dropped 5.7 percent.

A way to gauge how quickly employment and output recovers after each recession is to look at how many quarters it takes for the growth rate of each measure to turn positive. For example, one may look at employment growth during the first two quarters of each recovery. (The beginning of a recovery is assumed to be the first quarter when the NBS output growth turned positive. In the case of the 2008 recession, that would be the third quarter of 2009.) By that standard, employment growth has not picked up as quickly as it has in other recessions.[2] It is true that the first two quarters of the recovery after the 1957, 1960, 1991, and 2001 recessions also saw continued employment declines. Yet, two quarters into the recovery, the 2001 and 2008 recessions saw the biggest declines in employment growth when compared to prior recessions, -1.8 percent and -1.35 percent respectively. On a positive note, in contrast to the 2001 episode, the growth of weekly hours per employee was small but positive in the 2008 recovery period discussed here.

Another common measure used to gauge contraction in the labor market is the unemployment rate. That rate reached 10 percent in the fourth quarter of 2009, almost as high as the postwar high of 10.7 percent registered in the fourth quarter of 1982. However, looking simply at the rate itself may not be the best way to compare recessions. The demographic composition of the labor force differs substantially between these two periods and that should be taken into account. For instance, from 1982 to 2009 the share of young workers (16-19 years old) decreased from 7.6 percent to 4 percent. Typically, the unemployment rate among young workers is higher than the population as a whole. Given these demographic changes, how does the unemployment rate in 2009 compare to the unemployment rate in 1982?

Figure 2 shows the actual and the age-adjusted unemployment rate, which is constructed holding age composition of the labor force constant at the level present in the fourth quarter of 1982. As the figure shows, the composition-adjusted unemployment rate in the fourth quarter of 2009 is at a postwar high of 11.3 percent. Given that the composition of the labor force is older today as compared to 1982, this means that the "natural" rate of unemployment today is lower than it was in 1982. Thus, a 10 percent unemployment rate today is likely

FIGURE 2: UNEMPLOYMENT RATE, UNADJUSTED AND ADJUSTED BY AGE



SOURCE: Authors' calculations based on Bureau of Labor Statistics data.
NOTE: Shaded areas correspond to recessions.

further from the current natural unemployment rate than the 10.7 percent rate in the 1982 recession was from the natural unemployment rate then.[3] This is consistent with the claim that labor market conditions in the recent contraction are worse than other postwar contractions.[4]

LABOR FORCE PARTICIPATION AND AGE

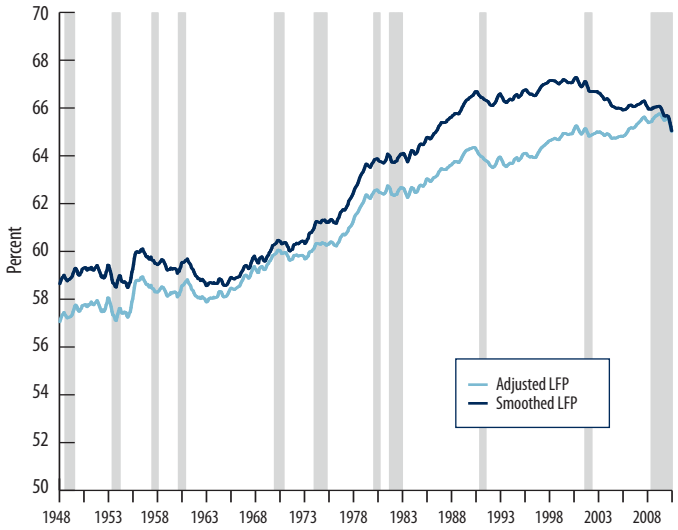
When economists consider the change in employment patterns, they also look at a factor known as "labor force participation" (LFP). During a recession, LFP tends to drop because workers become discouraged about the prospects for finding a job. Thus, a large cyclical downswing in labor force participation indicates a substantial slack in the economy. Consequently, as the economy picks up, these workers start looking for jobs, re-enter the labor pool, and then are counted among the ranks of the unemployed in the official statistics, which may cause a high unemployment rate to persist.

The monthly seasonally adjusted LFP rate rose steadily during much of the postwar period, from 58.6 percent in January 1948 to a peak of 67.3 percent in March 2000. It has been falling since then, declining 2.6 percentage points by January 2010. Half of that has occurred since the beginning of the most recent recession – the LFP dropped from 66 percent in December 2007 to 64.7 percent in January 2010. How much of the decline in the current recession is cyclical, implying that the workers will join the labor force again when the recovery picks up, and how much is a part of the downward trend?[5]

We focus on the part of the trend that is due to the aging of the population. Workers over 55 tend to have lower labor force attachment and their share in the population has been consistently growing over the last

decade. The increase of life expectancy and the aging of the large cohort of baby boomers have contributed to this change. Currently, the share of persons 55 years of age and older in the total working-age population is about 30.3 percent as compared to 26.8 percent in March 2000.

FIGURE 3: LABOR FORCE PARTICIPATION RATE

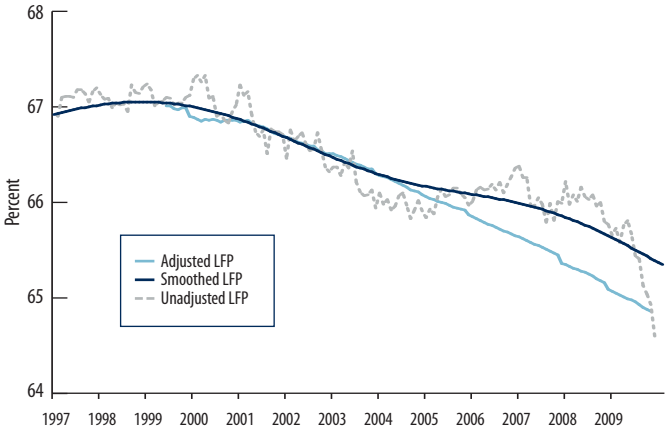


SOURCE: Authors' calculations based on Bureau of Labor Statistics data.
NOTE: Shaded areas correspond to recessions.

To understand how this influences the LFP, two of us (Kudlyak and Reilly) constructed a data series that holds age composition at the level it was at in December 2009 but reflects the actual measured LFP by age group. As seen in Figure 3, the composition-corrected LFP doesn't show a noticeable and sustained downward trend after 2001 the way the official estimate does. A modest decline doesn't appear until the middle of 2009 and it falls only to where it was in June 2005.

Figure 4 examines labor force participation since 1997. The adjusted trend results from holding the LFP constant for each age group at the July 1999 level (close to the highest aggregate LFP) and reflects only the change in the age composition of the population. In fact, the aggregate labor force participation rate was higher in 2005 and 2006 than is predicted by the age trend. These data seem to indicate that a large part of a decline in the official labor force participation in the recent recession is a part of a structural downward trend rather than due to a cyclical downswing. This suggests that there will be fewer labor resources available to fuel future economic growth.

FIGURE 4: LABOR FORCE PARTICIPATION RATE
ADJUSTED FOR AGE COMPOSITION OF WORK FORCE



SOURCE: Authors' calculations through December 2009 based on Bureau of Labor Statistics data.

CONCLUSION

When comparing the current recession to previous episodes, it is important to account for changes in demographics. Older Americans constitute a larger share of the entire population than we have observed in any post-war recession. Preliminary analysis suggests that the high unemployment we have witnessed in the recent recession is much higher in relative terms to what we have seen before. This implies that there is much slack in the labor market. But the analysis also suggests that the cyclical decline in labor force participation is not as high as in previous recessions and that there are not abundant labor resources outside of the official labor force to draw on as the economy recovers. ■

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ENDNOTES

[1] All of the numbers in this section pertain to the nonfarm business sector (NBS).

[2] Based on the most recently available quarterly data available at time of publication.

[3] See Robert Shimer, "Why is the U.S. Unemployment Rate So Much Lower?" NBER *Macroeconomics Annual 1998*, vol. 13, pp. 11-74. This article provides a compelling argument for why the unemployment rate should be adjusted for age composition but not for education composition of the labor force.

[4] For an example of this, see Michael Elsby, Bart Hobijn, and Ayşegül Şahin, "The Labor Market in the Great Recession," unpublished manuscript, March 2010.

[5] Note that the decline of LFP rate from its peak in 2000 cannot be explained by an increase in the number of those who want a job but are counted as outside of the labor force.

The views expressed in this article are those of the authors and not necessarily those of the Federal Reserve Bank of Richmond or the Federal Reserve System.

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